



## SEQUENCE LISTING

&lt;110&gt; Estrillon, Diego H

&lt;120&gt; COMPOSITIONS AND METHODS FOR THE IMPROVED DIAGNOSIS OF GERM CELL TUMORS

&lt;130&gt; B0801.70195US00

&lt;140&gt; 09/714,865

&lt;141&gt; 2000-11-16

&lt;150&gt; 60/166,394

&lt;151&gt; 1999-11-18

&lt;160&gt; 47

&lt;170&gt; PatentIn version 3.2

&lt;210&gt; 1

&lt;211&gt; 2224

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

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Ser	Arg	Arg	Asp	His	Phe	Met	Lys	Ser	Gly	Phe	Ala	Ser	Gly	Arg	Asn
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Gly	Leu	Gly	Ser	Pro 165	Asn	Asn	Asp	Leu	Asp 170	Pro	Asp	Glu	Cys	Met 175	Gln
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Gly 210	Gly	Tyr	Lys	Gly	Leu	Asn 215	Glu	Glu	Val	Ile	Thr 220	Gly	Ser	Gly	Lys
Asn 225	Ser	Trp	Lys	Ser	Glu 230	Ala	Glu	Gly	Gly	Glu 235	Ser	Ser	Asp	Thr	Gln 240
Gly	Pro	Lys	Val	Thr 245	Tyr	Ile	Pro	Pro	Pro	Pro	Pro	Glu	Asp	Glu 255	Asp
Ser	Ile	Phe	Ala 260	His	Tyr	Gln	Thr	Gly 265	Ile	Asn	Phe	Asp	Lys 270	Tyr	Asp
Thr	Ile	Leu	Val	Glu	Val	Ser	Gly 280	His	Asp	Ala	Pro	Pro	Ala 285	Ile	Leu
Thr	Phe	Glu	Glu	Ala	Asn	Leu 295	Cys	Gln	Thr	Leu	Asn 300	Asn	Asn	Ile	Ala

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325 330 335

Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ala His Met Met His  
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Asp Gly Ile Thr Ala Ser Arg Phe Lys Glu Leu Gln Glu Pro Glu Cys  
355 360 365

Ile Ile Val Ala Pro Thr Arg Glu Leu Val Asn Gln Ile Tyr Leu Glu  
370 375 380

Ala Arg Lys Phe Ser Phe Gly Thr Cys Val Arg Ala Val Val Ile Tyr  
385 390 395 400

Gly Gly Thr Gln Leu Gly His Ser Ile Arg Gln Ile Val Gln Gly Cys  
405 410 415

Asn Ile Leu Cys Ala Thr Pro Gly Arg Leu Met Asp Ile Ile Gly Lys  
420 425 430

Glu Lys Ile Gly Leu Lys Gln Ile Lys Tyr Leu Val Leu Asp Glu Ala  
435 440 445

Asp Arg Met Leu Asp Met Gly Phe Gly Pro Glu Met Lys Lys Leu Ile  
450 455 460

Ser Cys Pro Gly Met Pro Ser Lys Glu Gln Arg Gln Thr Leu Met Phe  
465 470 475 480

Ser Ala Thr Phe Pro Glu Glu Ile Gln Arg Leu Ala Ala Glu Phe Leu  
485 490 495

Lys Ser Asn Tyr Leu Phe Val Ala Val Gly Gln Val Gly Gly Ala Cys  
500 505 510

Arg Asp Val Gln Gln Thr Val Leu Gln Val Gly Gln Phe Ser Lys Arg  
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Arg Glu Arg Glu Gln Ala Leu Gly Asp Phe Arg Phe Gly Lys Cys Pro  
580 585 590

Val Leu Val Ala Thr Ser Val Ala Ala Arg Gly Leu Asp Ile Glu Asn  
595 600 605

Val Gln His Val Ile Asn Phe Asp Leu Pro Ser Thr Ile Asp Glu Tyr  
610 615 620

Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly Arg Ala  
625 630 635 640

Ile Ser Phe Phe Asp Leu Glu Ser Asp Asn His Leu Ala Gln Pro Leu  
645 650 655

Val Lys Val Leu Thr Asp Ala Gln Gln Asp Val Pro Ala Trp Leu Glu  
660 665 670

Glu Ile Ala Phe Ser Thr Tyr Ile Pro Gly Phe Ser Gly Ser Thr Arg  
675 680 685

Gly Asn Val Phe Ala Ser Val Asp Thr Arg Lys Gly Lys Ser Thr Leu  
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Phe	Gly	Leu	Gly	Arg	Pro	Asn	Ser	Glu	Ser	Asp	Gln	Asp	Gln	Gly	Thr
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Gln	Cys	Gly	Gly	Gly	Phe	Leu	Val	Leu	Gly	Lys	Pro	Ala	Ala	Ser	Asp
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Ser	Gly	Asn	Gly	Asp	Thr	Tyr	Gln	Ser	Arg	Ser	Gly	Ser	Gly	Arg	Gly
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Gly	Tyr	Lys	Gly	Leu	Asn	Glu	Glu	Val	Val	Thr	Gly	Ser	Gly	Lys	Asn
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Ser	Trp	Lys	Ser	Glu	Thr	Glu	Gly	Gly	Glu	Ser	Ser	Asp	Ser	Gln	Gly
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Pro	Lys	Val	Thr	Tyr	Ile	Pro	Pro	Pro	Pro	Pro	Glu	Asp	Glu	Asp	Ser
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Phe Glu Glu Ala Asn Leu Cys Gln Thr Leu Asn Asn Asn Ile Arg Lys  
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Ala Gly Tyr Thr Lys Leu Thr Pro Val Gln Lys Tyr Thr Ile Pro Ile  
305 310 315 320

Val Leu Ala Gly Arg Asp Leu Met Ala Cys Ala Gln Thr Gly Ser Gly  
325 330 335

Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ala His Met Met Arg Asp  
340 345 350

Gly Ile Thr Ala Ser Arg Phe Lys Glu Leu Gln Glu Pro Glu Cys Ile  
355 360 365

Ile Val Ala Pro Thr Arg Glu Leu Ile Asn Gln Ile Tyr Leu Glu Ala  
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Arg Lys Phe Ser Phe Gly Thr Cys Val Ile Ser Val Val Ile Tyr Gly  
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Gly Thr Gln Phe Gly His Ser Val Arg Gln Ile Val Gln Gly Cys Asn  
405 410 415

Ile Leu Cys Ala Thr Pro Gly Arg Leu Met Asp Ile Ile Gly Lys Glu  
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Lys Ile Gly Leu Lys Gln Val Lys Tyr Leu Val Leu Asp Glu Ala Asp  
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Ser Met Leu Asp Met Gly Phe Ala Pro Glu Ile Lys Lys Leu Ile Ser  
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Cys Pro Gly Met Pro Ser Lys Glu Gln His Gln Thr Leu Leu Phe Ser  
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Ser Asn Tyr Leu Phe Val Ala Val Gly Gln Val Gly Gly Ala Cys Arg  
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Asp Val Gln Gln Thr Ile Leu Gln Val Gly Gln Tyr Gln Lys Glu Lys  
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Gln Glu Lys Ile Ser Ser Thr Ser Ile His Gly Asp Arg Glu Gln Arg  
565 570 575

Glu Arg Glu Gln Ala Leu Gly Asp Phe Arg Cys Gly Lys Cys Pro Val  
580 585 590

Leu Val Ala Thr Ser Val Ala Ala Arg Gly Leu Asp Ile Glu Asn Val  
595 600 605

Gln His Val Ile Asn Phe Asp Leu Pro Ser Thr Ile Asp Glu Tyr Val  
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His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly Arg Ala Ile  
625 630 635 640

Ser Phe Phe Asp Thr Asp Ser Asp Asn His Leu Ala Gln Pro Leu Val  
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Lys Val Leu Ser Asp Ala Gln Gln Asp Val Pro Ala Trp Leu Glu Glu  
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Ile Ala Phe Ser Thr Tyr Val Pro Pro Ser Phe Ser Ser Ser Thr Arg  
675 680 685

Gly Gly Ala Val Phe Ala Ser Val Asp Thr Arg Lys Asn Tyr Gln Gly  
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<213> Rattus norvegicus



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Gly Pro Ser Gly Arg Asp His Phe Met Arg Ser Gly Phe Ser Ser Gly  
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Arg Asn Leu Gly Asn Arg Asp Ile Gly Glu Ser Ser Lys Arg Glu Thr  
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Thr Ser Thr Thr Gly Gly Phe Gly Arg Gly Lys Gly Phe Gly Asn Arg  
85 90 95

Gly Phe Leu Asn Asn Lys Phe Glu Glu Gly Asp Ser Ser Gly Phe Trp  
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Lys Glu Ser Thr Asn Asp Cys Glu Asp Thr Gln Thr Arg Ser Arg Gly  
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Phe Ser Lys Arg Gly Gly Tyr Pro Asp Gly Asn Asp Ser Glu Ala Ser  
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Gly Pro Phe Arg Arg Gly Gly Arg Asp Ser Glu Tyr Asp Gln Asp Gln  
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Gly Ser Gln Arg Gly Gly Gly Leu Phe Gly Ser Arg Lys Pro Ala Ala  
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Ser Asp Ser Gly Ser Gly Asp Thr Phe Gln Ser Arg Ser Gly Asn Ala  
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Lys Asn Ser Trp Lys Ser Glu Ala Glu Gly Gly Glu Ser Ser Asp Ile  
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Asp Thr Ile Leu Val Glu Val Ser Gly His Asp Ala Pro Pro Ala Ile  
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Ala Lys Ala Gly Tyr Thr Lys Leu Thr Pro Val Gln Lys Tyr Ser Ile  
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Pro Ile Val Leu Ala Gly Arg Asp Leu Met Ala Cys Ala Gln Thr Gly  
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Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ala His Met Met  
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Cys Ile Ile Val Ala Pro Thr Arg Glu Leu Ile Asn Gln Ile Tyr Leu  
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Glu Ala Arg Lys Phe Ser Phe Gly Thr Cys Val Arg Ala Val Val Ile  
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Tyr Gly Gly Thr Gln Phe Gly His Ser Ile Arg Gln Ile Val Gln Gly  
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Lys Glu Lys Ile Gly Leu Lys Gln Val Lys Tyr Leu Val Leu Asp Glu  
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Ala Asp Arg Met Leu Asp Met Gly Phe Gly Pro Glu Met Lys Lys Leu  
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Ile Ser Cys Pro Gly Met Pro Ser Lys Glu Gln Arg Gln Thr Leu Leu  
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Phe Ser Ala Thr Phe Pro Glu Glu Ile Gln Arg Leu Ala Gly Glu Phe  
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Leu Lys Ser Asn Tyr Leu Phe Val Ala Val Gly Gln Val Gly Gly Ala  
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Cys Arg Asp Val Gln Gln Ser Ile Leu Gln Val Gly Pro Val Phe Lys  
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Lys Arg Lys Leu Val Glu Ile Leu Arg Asn Ile Gly Asp Glu Arg Pro  
515 520 525

Met Val Phe Val Glu Thr Lys Lys Lys Ala Asp Phe Ile Ala Thr Phe  
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Leu Cys Gln Glu Lys Ile Ser Thr Thr Ser Ile His Gly Asp Arg Glu  
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Gln Arg Glu Arg Glu Gln Ala Leu Gly Asp Phe Arg Cys Gly Lys Cys  
565 570 575

Pro Val Leu Val Ala Thr Ser Val Ala Ala Arg Gly Leu Asp Ile Glu  
580 585 590

Asn Val Gln His Val Ile Asn Phe Asn Leu Pro Ser Thr Ile Asp Glu  
595 600 605

Tyr Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly Arg  
610 615 620

Ala Ile Ser Phe Phe Asp Thr Glu Ser Asp Asn His Leu Ala Gln Pro  
625 630 635 640

Leu Val Lys Val Leu Ser Asp Ala Gln Gln Asp Val Pro Ala Trp Leu  
645 650 655

Glu Glu Ile Ala Phe Ser Ser Tyr Ala Pro Pro Ser Phe Ser Asn Ser  
660 665 670

Thr Arg Gly Ala Val Phe Ala Ser Phe Asp Thr Arg Lys Asn Phe Gln  
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Gly Lys Asn Thr Leu Asn Thr Ala Gly Ile Ser Ser Ala Gln Ala Pro  
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Asn Pro Val Asp Asp Glu Ser Trp Asp  
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<213> *Xenopus laevis*

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35 40 45

Ser Phe Gly Asn Arg Gly Gly Tyr Arg Ser Glu Arg Ser Arg Pro Ser  
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Asn Phe Asn Arg Gly Ser Arg Thr Glu Arg Gly Arg Gly Arg Gly Phe  
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Gly Thr Asn Arg Asn Asp Asn Tyr Ser Ser Glu Arg Asp Val Phe Gly  
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Asp Asp Glu Arg Asp Gln Arg Arg Gly Phe Pro Gly Arg Gly Gly Tyr  
100 105 110

Asn Gly Asn Glu Asp Gly Gln Lys Pro Asn Ala Phe Arg Gly Arg Gly  
115 120 125

Gly Phe Arg Asn Glu Asn Glu Gln Arg Arg Gly Phe Gly Glu Arg Gly  
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Gly Phe Arg Ser Glu Asn Gly Gln Arg Asn Phe Asp Asn Arg Gly Asp  
145 150 155 160

Phe Gly Asn Ser Gly Glu Glu Glu Asp Arg Pro Arg Ser Tyr Gly Arg  
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Gly Gly Phe Asn Asn Ser Asp Thr Gly Gly Arg Gly Arg Arg Gly Gly  
180 185 190

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195 200 205

Val Gly Val Glu Ser Gly Lys Ser Gln Glu Glu Gly Asn Glu Lys Asp  
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Glu Lys Pro Lys Lys Val Thr Tyr Ile Pro Pro Pro Pro Pro Asp Gly  
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Glu Asp Asn Ile Phe Arg Gln Tyr Gln Ser Gly Ile Asn Phe Asp Lys  
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Tyr Asp Glu Ile Leu Val Asp Val Thr Gly Lys Asp Val Pro Pro Ala  
260 265 270

Ile Leu Thr Phe Glu Glu Ala Asn Leu Cys Glu Thr Leu Arg Arg Asn  
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Val Ala Arg Ala Gly Tyr Val Lys Leu Thr Pro Val Gln Lys His Ser  
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Ile Pro Ile Ile Met Ala Gly Arg Asp Leu Met Ala Cys Ala Gln Thr  
305 310 315 320

Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ser Tyr Met  
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Met Asn Glu Gly Ile Thr Ala Ser Gln Tyr Leu Gln Leu Gln Glu Pro  
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Glu Ala Ile Ile Ile Ala Pro Thr Arg Glu Leu Ile Asn Gln Ile Tyr  
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Leu Asp Ala Arg Lys Phe Ser Tyr Gly Thr Cys Val Arg Pro Val Val  
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Val Tyr Gly Gly Ile Gln Pro Val His Ala Met Arg Asp Val Glu Lys  
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Ser Lys Glu Lys Ile Gly Leu Ser Lys Leu Arg Tyr Leu Val Leu Asp  
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Glu Ala Asp Arg Met Leu Asp Met Gly Phe Ala Pro Glu Ile Glu Lys  
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Leu Met Thr Lys Pro Gly Met Pro Thr Lys Glu Lys Arg Gln Thr Leu  
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Tyr Leu Lys Ser Glu His Leu Phe Val Val Val Gly Leu Val Gly Gly  
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Ala Cys Ser Asp Val Ala Gln Thr Val Leu Glu Met Arg Glu Asn Gly  
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Tyr Leu Cys Gln Glu Lys Phe Ser Ser Thr Ser Ile His Gly Asp Arg  
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Glu Gln Tyr Gln Arg Glu Ser Ala Leu Trp Asp Phe Arg Thr Gly Lys  
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Cys Thr Val Ile Val Cys Thr Ala Val Ala Ala Arg Gly Leu Asp Ile  
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Glu Asn Val Gln His Val Ile Asn Tyr Asp Val Pro Lys Glu Val Asp  
595 600 605

Glu Tyr Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly  
610 615 620

Lys Ala Thr Ser Phe Phe Asn Val Gln Asp Asp His Val Ile Ala Arg  
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Pro Leu Val Lys Ile Leu Thr Asp Ala His Gln Glu Val Pro Ala Trp  
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Leu Glu Glu Ile Ala Phe Gly Gly His Gly Ala Leu Asn Ser Phe Tyr  
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Pro Ser Phe Ala Gln Glu Glu Glu Ala Ser Trp Asp  
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Arg Asp Glu Asn Asp Glu Asn Gly Asn Asp Asp Gly Trp Lys Gly Gly  
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Gly Ser Glu Asn Ala Gly Pro Lys Val Val Tyr Val Pro Pro Pro Pro  
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340 345 350

Gln Ile Tyr Leu Glu Ala Arg Lys Phe Ala Tyr Gly Thr Cys Val Arg  
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Pro Val Val Val Tyr Gly Gly Ile Asn Thr Gly Tyr Thr Ile Arg Glu  
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Val Leu Lys Gly Cys Asn Val Leu Cys Ala Thr Pro Gly Arg Leu His  
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Asp Leu Ile Gly Arg Gly Lys Ile Gly Leu Ser Lys Val Arg Tyr Leu  
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Val Leu Asp Glu Ala Asp Arg Met Leu Asp Met Gly Phe Glu Pro Glu  
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Met Arg Lys Leu Val Ala Ser Pro Gly Met Pro Ser Lys Glu Lys Arg  
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Gln Thr Leu Met Phe Ser Ala Thr Tyr Pro Glu Asp Ile Gln Arg Met  
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Val Gly Gly Ala Cys Ser Asp Val Glu Gln Thr Ile Val Gln Val Asp  
485 490 495

Gln Tyr Ser Lys Arg Asp Gln Leu Leu Glu Leu Leu Arg Ala Thr Gly  
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Asn Glu Arg Thr Met Val Phe Val Glu Thr Lys Arg Ser Ala Asp Phe  
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Gly Asp Arg Glu Gln Arg Glu Arg Glu Lys Ala Leu Ser Asp Phe Arg  
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Ser Ile Asp Glu Tyr Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly  
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Gly Tyr Gln Gly Gly Asn Arg Asp Val Phe Gly Arg Ile Gly Gly Gly  
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Gly Ser Arg Gly Gly Gln Gly Gly Phe Arg Gly Gly Glu Gly Gly Phe  
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Glu Glu Arg Gly Gly Glu Arg Gly Glu Arg Gly Asp Gly Gly Phe Ala  
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Glu Asp Val Glu Arg Lys Arg Glu Phe Tyr Ile Pro Pro Glu Pro Ser  
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Asn Asp Ala Ile Glu Ile Phe Ser Ser Gly Ile Ala Ser Gly Ile His  
210 215 220

Phe Ser Lys Tyr Asn Asn Ile Pro Val Lys Val Thr Gly Ser Asp Val  
225 230 235 240

Pro Gln Pro Ile Gln His Phe Thr Ser Ala Asp Leu Arg Asp Ile Ile  
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Ile Asp Asn Val Asn Lys Ser Gly Phe Lys Ile Pro Thr Pro Ile Gln  
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Lys Cys Ser Ile Pro Val Ile Ser Ser Gly Arg Asp Leu Met Ala Cys  
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Ala Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu  
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Ser Lys Leu Leu Glu Asp Pro His Glu Leu Glu Leu Gly Arg Pro Gln  
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Val Val Ile Val Ser Pro Thr Arg Glu Leu Ala Ile Gln Ile Phe Asn  
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Glu Ala Arg Lys Phe Ala Phe Glu Ser Tyr Leu Lys Ile Gly Ile Val  
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Cys His Val Val Ile Ala Thr Pro Gly Arg Leu Leu Asp Phe Val Asp  
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Arg Thr Phe Ile Thr Phe Glu Asp Thr Arg Phe Val Val Leu Asp Glu  
385 390 395 400

Ala Asp Arg Met Leu Asp Met Gly Phe Ser Glu Asp Met Arg Arg Ile  
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Met Thr His Val Thr Met Arg Pro Glu His Gln Thr Leu Met Phe Ser  
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Ala Thr Phe Pro Glu Glu Ile Gln Arg Met Ala Gly Glu Phe Leu Lys  
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Ala Gly Gly Asp Gly Gly Tyr Ser Asn Gln Asn Phe Gly Gly Val Asp  
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<210> 15

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 <212> DNA  
 <213> Dictyostelium discoideum

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<210> 23  
 <211> 661  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 23

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Arg Gly Gly Asp Trp Ser Asp Asp Glu Asp Thr Ala Lys Ser Phe Ser  
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Gly Glu Ala Glu Gly Asp Gly Val Gly Gly Ser Gly Gly Glu Gly Gly  
 35 40 45

Gly Tyr Gln Gly Gly Asn Arg Asp Val Phe Gly Arg Ile Gly Gly Gly  
 50 55 60

Arg Gly Gly Gly Ala Gly Gly Tyr Arg Gly Gly Asn Arg Asp Gly Gly  
 65 70 75 80

Gly Phe His Gly Gly Arg Arg Glu Gly Glu Arg Asp Phe Arg Gly Gly  
 85 90 95

Glu Gly Gly Phe Arg Gly Gly Gln Gly Gly Ser Arg Gly Gly Gln Gly  
 100 105 110

Gly Ser Arg Gly Gly Gln Gly Gly Phe Arg Gly Gly Glu Gly Gly Phe  
 115 120 125

Arg Gly Arg Leu Tyr Glu Asn Glu Asp Gly Asp Glu Arg Arg Gly Arg

130	135	140
Leu Asp Arg Glu Glu Arg Gly Gly Glu Arg Arg Gly Arg Leu Asp Arg 145 150 155 160		
Glu Glu Arg Gly Gly Glu Arg Gly Glu Arg Gly Asp Gly Gly Phe Ala 165 170 175		
Arg Arg Arg Arg Asn Glu Asp Asp Ile Asn Asn Asn Asn Asn Ile Ala 180 185 190		
Glu Asp Val Glu Arg Lys Arg Glu Phe Tyr Ile Pro Pro Glu Pro Ser 195 200 205		
Asn Asp Ala Ile Glu Ile Phe Ser Ser Gly Ile Ala Ser Gly Ile His 210 215 220		
Phe Ser Lys Tyr Asn Asn Ile Pro Val Lys Val Thr Gly Ser Asp Val 225 230 235 240		
Pro Gln Pro Ile Gln His Phe Thr Ser Ala Asp Leu Arg Asp Ile Ile 245 250 255		
Ile Asp Asn Val Asn Lys Ser Gly Phe Lys Ile Pro Thr Pro Ile Gln 260 265 270		
Lys Cys Ser Ile Pro Val Ile Ser Ser Gly Arg Asp Leu Met Ala Cys 275 280 285		
Ala Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu 290 295 300		
Ser Lys Leu Leu Glu Asp Pro His Glu Leu Glu Leu Gly Arg Pro Gln 305 310 315 320		
Val Val Ile Val Ser Pro Thr Arg Glu Leu Ala Ile Gln Ile Phe Asn 325 330 335		
Glu Ala Arg Lys Phe Ala Phe Glu Ser Tyr Leu Lys Ile Gly Ile Val 340 345 350		
Tyr Gly Gly Thr Ser Phe Arg His Gln Asn Glu Cys Ile Thr Arg Gly 355 360 365		
Cys His Val Val Ile Ala Thr Pro Gly Arg Leu Leu Asp Phe Val Asp 370 375 380		

Arg Thr Phe Ile Thr Phe Glu Asp Thr Arg Phe Val Val Leu Asp Glu  
385 390 395 400

Ala Asp Arg Met Leu Asp Met Gly Phe Ser Glu Asp Met Arg Arg Ile  
405 410 415

Met Thr His Val Thr Met Arg Pro Glu His Gln Thr Leu Met Phe Ser  
420 425 430

Ala Thr Phe Pro Glu Glu Ile Gln Arg Met Ala Gly Glu Phe Leu Lys  
435 440 445

Asn Tyr Val Ser Val Ala Ile Gly Ile Val Gly Gly Ala Cys Ser Asp  
450 455 460

Val Lys Gln Thr Ile Tyr Glu Val Asn Lys Tyr Ala Lys Arg Ser Lys  
465 470 475 480

Leu Ile Glu Ile Leu Ser Glu Gln Ala Asp Gly Thr Ile Val Phe Val  
485 490 495

Glu Thr Lys Arg Gly Ala Asp Phe Leu Ala Ser Phe Leu Ser Glu Lys  
500 505 510

Glu Phe Pro Thr Thr Ser Ile His Gly Asp Arg Leu Gln Ser Gln Arg  
515 520 525

Glu Gln Ala Leu Arg Asp Phe Lys Asn Gly Ser Met Lys Val Leu Ile  
530 535 540

Ala Thr Ser Val Ala Ser Arg Gly Leu Asp Ile Lys Asn Ile Lys His  
545 550 555 560

Val Ile Asn Tyr Asp Met Pro Ser Lys Ile Asp Asp Tyr Val His Arg  
565 570 575

Ile Gly Arg Thr Gly Cys Val Gly Asn Asn Gly Arg Ala Thr Ser Phe  
580 585 590

Phe Asp Pro Glu Lys Asp Arg Ala Ile Ala Ala Asp Leu Val Lys Ile  
595 600 605

Leu Glu Gly Ser Gly Gln Thr Val Pro Asp Phe Leu Arg Thr Cys Gly  
610 615 620

Ala Gly Gly Asp Gly Gly Tyr Ser Asn Gln Asn Phe Gly Gly Val Asp  
625 630 635 640

Val Arg Gly Arg Gly Asn Tyr Val Gly Asp Ala Thr Asn Val Glu Glu  
645 650 655

Glu Glu Gln Trp Asp  
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<210> 24  
<211> 713  
<212> PRT  
<213> Rattus norvegicus

<400> 24

Met Gly Asp Glu Asp Trp Glu Ala Glu Ile Leu Lys Pro His Val Ser  
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Ser Tyr Val Pro Val Phe Glu Lys Asp Lys Tyr Ser Ser Gly Ala Asn  
20 25 30

Gly Asp Thr Phe Asn Arg Thr Ser Ala Ser Ser Ser Glu Met Glu Asp  
35 40 45

Gly Pro Ser Gly Arg Asp His Phe Met Arg Ser Gly Phe Ser Ser Gly  
50 55 60

Arg Asn Leu Gly Asn Arg Asp Ile Gly Glu Ser Ser Lys Arg Glu Thr  
65 70 75 80

Thr Ser Thr Thr Gly Gly Phe Gly Arg Gly Lys Gly Phe Gly Asn Arg  
85 90 95

Gly Phe Leu Asn Asn Lys Phe Glu Glu Gly Asp Ser Ser Gly Phe Trp  
100 105 110

Lys Glu Ser Thr Asn Asp Cys Glu Asp Thr Gln Thr Arg Ser Arg Gly  
115 120 125

Phe Ser Lys Arg Gly Gly Tyr Pro Asp Gly Asn Asp Ser Glu Ala Ser  
130 135 140

Gly Pro Phe Arg Arg Gly Gly Arg Asp Ser Glu Tyr Asp Gln Asp Gln  
145 150 155 160

Gly Ser Gln Arg Gly Gly Gly Leu Phe Gly Ser Arg Lys Pro Ala Ala

165										170				175			
Ser	Asp	Ser	Gly	Ser	Gly	Asp	Thr	Phe	Gln	Ser	Arg	Ser	Gly	Asn	Ala		
			180					185					190				
Arg	Gly	Ala	Tyr	Lys	Gly	Leu	Asn	Glu	Glu	Val	Val	Thr	Gly	Ser	Gly		
		195					200					205					
Lys	Asn	Ser	Trp	Lys	Ser	Glu	Ala	Glu	Gly	Gly	Glu	Ser	Ser	Asp	Ile		
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Gln	Gly	Pro	Lys	Val	Thr	Tyr	Ile	Pro	Pro	Pro	Pro	Pro	Glu	Asp	Glu		
225					230					235					240		
Asp	Ser	Ile	Phe	Ala	His	Tyr	Gln	Thr	Gly	Ile	Asn	Phe	Asp	Lys	Tyr		
				245					250					255			
Asp	Thr	Ile	Leu	Val	Glu	Val	Ser	Gly	His	Asp	Ala	Pro	Pro	Ala	Ile		
			260					265					270				
Leu	Thr	Phe	Glu	Glu	Ala	Asn	Leu	Cys	Gln	Thr	Leu	Asn	Asn	Asn	Ile		
		275					280					285					
Ala	Lys	Ala	Gly	Tyr	Thr	Lys	Leu	Thr	Pro	Val	Gln	Lys	Tyr	Ser	Ile		
	290					295					300						
Pro	Ile	Val	Leu	Ala	Gly	Arg	Asp	Leu	Met	Ala	Cys	Ala	Gln	Thr	Gly		
305					310					315					320		
Ser	Gly	Lys	Thr	Ala	Ala	Phe	Leu	Leu	Pro	Ile	Leu	Ala	His	Met	Met		
				325					330					335			
Arg	Asp	Gly	Ile	Thr	Ala	Ser	Arg	Phe	Lys	Glu	Leu	Gln	Glu	Pro	Glu		
			340					345					350				
Cys	Ile	Ile	Val	Ala	Pro	Thr	Arg	Glu	Leu	Ile	Asn	Gln	Ile	Tyr	Leu		
	355						360					365					
Glu	Ala	Arg	Lys	Phe	Ser	Phe	Gly	Thr	Cys	Val	Arg	Ala	Val	Val	Ile		
	370					375					380						
Tyr	Gly	Gly	Thr	Gln	Phe	Gly	His	Ser	Ile	Arg	Gln	Ile	Val	Gln	Gly		
385					390					395					400		
Cys	Asn	Ile	Leu	Cys	Ala	Thr	Pro	Gly	Arg	Leu	Met	Asp	Ile	Ile	Gly		
				405					410					415			

Lys Glu Lys Ile Gly Leu Lys Gln Val Lys Tyr Leu Val Leu Asp Glu  
420 425 430

Ala Asp Arg Met Leu Asp Met Gly Phe Gly Pro Glu Met Lys Lys Leu  
435 440 445

Ile Ser Cys Pro Gly Met Pro Ser Lys Glu Gln Arg Gln Thr Leu Leu  
450 455 460

Phe Ser Ala Thr Phe Pro Glu Glu Ile Gln Arg Leu Ala Gly Glu Phe  
465 470 475 480

Leu Lys Ser Asn Tyr Leu Phe Val Ala Val Gly Gln Val Gly Gly Ala  
485 490 495

Cys Arg Asp Val Gln Gln Ser Ile Leu Gln Val Gly Pro Val Phe Lys  
500 505 510

Lys Arg Lys Leu Val Glu Ile Leu Arg Asn Ile Gly Asp Glu Arg Pro  
515 520 525

Met Val Phe Val Glu Thr Lys Lys Lys Ala Asp Phe Ile Ala Thr Phe  
530 535 540

Leu Cys Gln Glu Lys Ile Ser Thr Thr Ser Ile His Gly Asp Arg Glu  
545 550 555 560

Gln Arg Glu Arg Glu Gln Ala Leu Gly Asp Phe Arg Cys Gly Lys Cys  
565 570 575

Pro Val Leu Val Ala Thr Ser Val Ala Ala Arg Gly Leu Asp Ile Glu  
580 585 590

Asn Val Gln His Val Ile Asn Phe Asn Leu Pro Ser Thr Ile Asp Glu  
595 600 605

Tyr Val His Arg Ile Gly Arg Thr Gly Arg Cys Gly Asn Thr Gly Arg  
610 615 620

Ala Ile Ser Phe Phe Asp Thr Glu Ser Asp Asn His Leu Ala Gln Pro  
625 630 635 640

Leu Val Lys Val Leu Ser Asp Ala Gln Gln Asp Val Pro Ala Trp Leu  
645 650 655



Glu Glu Ile Ala Phe Ser Ser Tyr Ala Pro Pro Ser Phe Ser Asn Ser  
660 665 670

Thr Arg Gly Ala Val Phe Ala Ser Phe Asp Thr Arg Lys Asn Phe Gln  
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Gly Lys Asn Thr Leu Asn Thr Ala Gly Ile Ser Ser Ala Gln Ala Pro  
690 695 700

Asn Pro Val Asp Asp Glu Ser Trp Asp  
705 710

<210> 25  
<211> 637  
<212> PRT  
<213> Mus musculus

<400> 25

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Phe Glu Glu Gly Asp Ser Ser Gly Phe Trp Lys Glu Ser Asn Asn Asp  
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Cys Glu Asp Asn Gln Thr Arg Ser Arg Gly Phe Ser Lys Arg Gly Gly  
35 40 45

Cys Gln Asp Gly Asn Asp Ser Glu Ala Ser Gly Pro Phe Arg Arg Gly  
50 55 60

Gly Arg Gly Ser Phe Arg Gly Cys Arg Gly Gly Phe Gly Leu Gly Arg  
65 70 75 80

Pro Asn Ser Glu Ser Asp Gln Asp Gln Gly Thr Gln Cys Gly Gly Gly  
85 90 95

Phe Leu Val Leu Gly Lys Pro Ala Ala Ser Asp Ser Gly Asn Gly Asp  
100 105 110

Thr Tyr Gln Ser Arg Ser Gly Ser Gly Arg Gly Gly Tyr Lys Gly Leu  
115 120 125

Asn Glu Glu Val Val Thr Gly Ser Gly Lys Asn Ser Trp Lys Ser Glu  
130 135 140

Thr Glu Gly Gly Glu Ser Ser Asp Ser Gln Gly Pro Lys Val Thr Tyr

145		150		155		160									
Ile	Pro	Pro	Pro	Pro	Pro	Glu	Asp	Glu	Asp	Ser	Ile	Phe	Ala	His	Tyr
				165					170					175	
Gln	Thr	Gly	Ile	Asn	Phe	Asp	Lys	Tyr	Asp	Thr	Ile	Leu	Val	Glu	Val
			180					185					190		
Ser	Gly	His	Asp	Ala	Pro	Pro	Ala	Ile	Leu	Thr	Phe	Glu	Glu	Ala	Asn
		195					200					205			
Leu	Cys	Gln	Thr	Leu	Asn	Asn	Asn	Ile	Arg	Lys	Ala	Gly	Tyr	Thr	Lys
	210					215					220				
Leu	Thr	Pro	Val	Gln	Lys	Tyr	Thr	Ile	Pro	Ile	Val	Leu	Ala	Gly	Arg
225					230					235					240
Asp	Leu	Met	Ala	Cys	Ala	Gln	Thr	Gly	Ser	Gly	Lys	Thr	Ala	Ala	Phe
				245					250					255	
Leu	Leu	Pro	Ile	Leu	Ala	His	Met	Met	Arg	Asp	Gly	Ile	Thr	Ala	Ser
			260					265					270		
Arg	Phe	Lys	Glu	Leu	Gln	Glu	Pro	Glu	Cys	Ile	Ile	Val	Ala	Pro	Thr
		275					280					285			
Arg	Glu	Leu	Ile	Asn	Gln	Ile	Tyr	Leu	Glu	Ala	Arg	Lys	Phe	Ser	Phe
	290					295					300				
Gly	Thr	Cys	Val	Ile	Ser	Val	Val	Ile	Tyr	Gly	Gly	Thr	Gln	Phe	Gly
305					310					315					320
His	Ser	Val	Arg	Gln	Ile	Val	Gln	Gly	Cys	Asn	Ile	Leu	Cys	Ala	Thr
				325					330					335	
Pro	Gly	Arg	Leu	Met	Asp	Ile	Ile	Gly	Lys	Glu	Lys	Ile	Gly	Leu	Lys
			340					345					350		
Gln	Val	Lys	Tyr	Leu	Val	Leu	Asp	Glu	Ala	Asp	Ser	Met	Leu	Asp	Met
		355					360					365			
Gly	Phe	Ala	Pro	Glu	Ile	Lys	Lys	Leu	Ile	Ser	Cys	Pro	Gly	Met	Pro
	370					375					380				
Ser	Lys	Glu	Gln	His	Gln	Thr	Leu	Leu	Phe	Ser	Ala	Thr	Phe	Pro	Glu
385					390					395					400

Glu Ile Gln Arg Leu Ala Gly Asp Phe Leu Lys Ser Asn Tyr Leu Phe  
405 410 415

Val Ala Val Gly Gln Val Gly Gly Ala Cys Arg Asp Val Gln Gln Thr  
420 425 430

Ile Leu Gln Val Gly Gln Tyr Gln Lys Glu Lys Ser Leu Leu Arg Phe  
435 440 445

Tyr Glu Asn Ile Gly Asp Glu Arg Thr Met Val Phe Val Glu Thr Lys  
450 455 460

Lys Lys Ala Asp Phe Ile Ala Thr Phe Leu Cys Gln Glu Lys Ile Ser  
465 470 475 480

Ser Thr Ser Ile His Gly Asp Arg Glu Gln Arg Glu Arg Glu Gln Ala  
485 490 495

Leu Gly Asp Phe Arg Cys Gly Lys Cys Pro Val Leu Val Ala Thr Ser  
500 505 510

Val Ala Ala Arg Gly Leu Asp Ile Glu Asn Val Gln His Val Ile Asn  
515 520 525

Phe Asp Leu Pro Ser Thr Ile Asp Glu Tyr Val His Arg Ile Gly Arg  
530 535 540

Thr Gly Arg Cys Gly Asn Thr Gly Arg Ala Ile Ser Phe Phe Asp Thr  
545 550 555 560

Asp Ser Asp Asn His Leu Ala Gln Pro Leu Val Lys Val Leu Ser Asp  
565 570 575

Ala Gln Gln Asp Val Pro Ala Trp Leu Glu Glu Ile Ala Phe Ser Thr  
580 585 590

Tyr Val Pro Pro Ser Phe Ser Ser Ser Thr Arg Gly Gly Ala Val Phe  
595 600 605

Ala Ser Val Asp Thr Arg Lys Asn Tyr Gln Gly Lys Ala His Val Glu  
610 615 620

Tyr Ser Gly Asp Phe Phe Phe Thr Ser Ser Gln Ser Ser  
625 630 635

<210> 26  
<211> 662  
<212> PRT  
<213> Mus musculus

<400> 26

Met Ser His Val Ala Val Glu Asn Ala Leu Gly Leu Asp Gln Gln Phe  
1 5 10 15

Ala Gly Leu Asp Leu Asn Ser Ser Asp Asn Gln Ser Gly Gly Ser Thr  
20 25 30

Ala Ser Lys Gly Arg Tyr Ile Pro Pro His Leu Arg Asn Arg Glu Ala  
35 40 45

Thr Lys Gly Phe Tyr Asp Lys Asp Ser Ser Gly Trp Ser Ser Ser Lys  
50 55 60

Asp Lys Asp Ala Tyr Ser Ser Phe Gly Ser Arg Gly Asp Ser Arg Gly  
65 70 75 80

Lys Ser Ser Phe Phe Gly Asp Arg Gly Ser Gly Ser Arg Gly Arg Phe  
85 90 95

Asp Asp Arg Gly Arg Gly Asp Tyr Asp Gly Ile Gly Gly Arg Gly Asp  
100 105 110

Arg Ser Gly Phe Gly Lys Phe Glu Arg Gly Gly Asn Ser Arg Trp Cys  
115 120 125

Asp Lys Ser Asp Glu Asp Asp Trp Ser Lys Pro Leu Pro Pro Ser Glu  
130 135 140

Arg Leu Glu Gln Glu Leu Phe Ser Gly Gly Asn Thr Gly Ile Asn Phe  
145 150 155 160

Glu Lys Tyr Asp Asp Ile Pro Val Glu Ala Thr Gly Asn Asn Cys Pro  
165 170 175

Pro His Ile Glu Ser Phe Ser Asp Val Glu Met Gly Glu Ile Ile Met  
180 185 190

Gly Asn Ile Glu Leu Thr Arg Tyr Thr Arg Pro Thr Pro Val Gln Lys  
195 200 205

His Ala Ile Pro Ile Ile Lys Glu Lys Arg Asp Leu Met Ala Cys Ala

210					215					220					
Gln	Thr	Gly	Ser	Gly	Lys	Thr	Ala	Ala	Phe	Leu	Leu	Pro	Ile	Leu	Ser
225					230					235					240
Gln	Ile	Tyr	Ala	Asp	Gly	Pro	Gly	Glu	Ala	Leu	Arg	Ala	Met	Lys	Glu
				245					250					255	
Asn	Gly	Arg	Tyr	Gly	Arg	Arg	Lys	Gln	Tyr	Pro	Ile	Ser	Leu	Val	Leu
			260					265					270		
Ala	Pro	Thr	Arg	Glu	Leu	Ala	Val	Gln	Ile	Tyr	Glu	Glu	Ala	Arg	Lys
		275					280					285			
Phe	Ser	Tyr	Arg	Ser	Arg	Val	Arg	Pro	Cys	Val	Val	Tyr	Gly	Gly	Ala
	290					295					300				
Glu	Ile	Gly	Gln	Gln	Ile	Arg	Asp	Leu	Glu	Arg	Gly	Cys	His	Leu	Leu
305				310						315					320
Val	Ala	Thr	Pro	Gly	Arg	Leu	Val	Asp	Met	Met	Glu	Arg	Gly	Lys	Ile
				325					330					335	
Gly	Leu	Asp	Phe	Cys	Lys	Tyr	Leu	Val	Leu	Asp	Glu	Ala	Asp	Arg	Met
			340					345					350		
Leu	Asp	Met	Gly	Phe	Glu	Pro	Gln	Ile	Arg	Arg	Ile	Val	Glu	Gln	Asp
		355					360					365			
Thr	Met	Pro	Pro	Lys	Gly	Val	Arg	His	Thr	Met	Met	Phe	Ser	Ala	Thr
	370					375					380				
Phe	Pro	Lys	Glu	Ile	Gln	Met	Leu	Ala	Arg	Asp	Phe	Leu	Asp	Glu	Tyr
385					390					395					400
Ile	Phe	Leu	Ala	Val	Gly	Arg	Val	Gly	Ser	Thr	Ser	Glu	Asn	Ile	Thr
				405					410					415	
Gln	Lys	Val	Val	Trp	Val	Glu	Glu	Ile	Asp	Lys	Arg	Ser	Phe	Leu	Leu
			420					425					430		
Asp	Leu	Leu	Asn	Ala	Thr	Gly	Lys	Asp	Ser	Leu	Thr	Leu	Val	Phe	Val
		435					440					445			
Glu	Thr	Lys	Lys	Gly	Ala	Asp	Ser	Leu	Glu	Asp	Phe	Leu	Tyr	His	Glu
	450					455					460				

Gly Tyr Ala Cys Thr Ser Ile His Gly Asp Arg Ser Gln Arg Asp Arg  
465 470 475 480

Glu Glu Ala Leu His Gln Phe Arg Ser Gly Lys Ser Pro Ile Leu Val  
485 490 495

Ala Thr Ala Val Ala Ala Arg Gly Leu Asp Ile Ser Asn Val Lys His  
500 505 510

Val Ile Asn Phe Asp Leu Pro Ser Asp Ile Glu Glu Tyr Val His Arg  
515 520 525

Ile Gly Arg Thr Gly Arg Val Gly Asn Leu Gly Leu Ala Thr Ser Phe  
530 535 540

Phe Asn Glu Arg Asn Ile Asn Ile Thr Lys Asp Leu Leu Asp Leu Leu  
545 550 555 560

Val Glu Ala Lys Gln Glu Val Pro Ser Trp Leu Glu Asn Met Ala Phe  
565 570 575

Glu His His Tyr Lys Gly Ser Ser Arg Gly Arg Ser Lys Ser Ser Arg  
580 585 590

Phe Ser Gly Gly Phe Gly Ala Arg Asp Tyr Arg Gln Ser Ser Gly Ala  
595 600 605

Ser Ser Ser Ser Phe Ser Ser Ser Arg Ala Ser Ser Ser Arg Ser Gly  
610 615 620

Gly Gly Gly His Gly Gly Ser Arg Gly Phe Gly Gly Gly Gly Tyr Gly  
625 630 635 640

Gly Phe Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Asn Ser Gln Gly  
645 650 655

Val Asp Trp Trp Gly Asn  
660

<210> 27  
<211> 662  
<212> PRT  
<213> Homo sapiens  
  
<400> 27

Met Ser His Val Ala Val Glu Asn Ala Leu Gly Leu Asp Gln Gln Phe  
 1 5 10 15  
 Ala Gly Leu Asp Leu Asn Ser Ser Asp Asn Gln Ser Gly Gly Ser Thr  
 20 25 30  
 Ala Ser Lys Gly Arg Tyr Ile Pro Pro His Leu Arg Asn Arg Glu Ala  
 35 40 45  
 Thr Lys Gly Phe Tyr Asp Lys Asp Ser Ser Gly Trp Ser Ser Ser Lys  
 50 55 60  
 Asp Lys Asp Ala Tyr Ser Ser Phe Gly Ser Arg Ser Asp Ser Arg Gly  
 65 70 75 80  
 Lys Ser Ser Phe Phe Ser Asp Arg Gly Ser Gly Ser Arg Gly Arg Phe  
 85 90 95  
 Asp Asp Arg Gly Arg Ser Asp Tyr Asp Gly Ile Gly Ser Arg Gly Asp  
 100 105 110  
 Arg Ser Gly Phe Gly Lys Phe Glu Arg Gly Gly Asn Ser Arg Trp Cys  
 115 120 125  
 Asp Lys Ser Asp Glu Asp Asp Trp Ser Lys Pro Leu Pro Pro Ser Glu  
 130 135 140  
 Arg Leu Glu Gln Glu Leu Phe Ser Gly Gly Asn Thr Gly Ile Asn Phe  
 145 150 155 160  
 Glu Lys Tyr Asp Asp Ile Pro Val Glu Ala Thr Gly Asn Asn Cys Pro  
 165 170 175  
 Pro His Ile Glu Ser Phe Ser Asp Val Glu Met Gly Glu Ile Ile Met  
 180 185 190  
 Gly Asn Ile Glu Leu Thr Arg Tyr Thr Arg Pro Thr Pro Val Gln Lys  
 195 200 205  
 His Ala Ile Pro Ile Ile Lys Glu Lys Arg Asp Leu Met Ala Cys Ala  
 210 215 220  
 Gln Thr Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ser  
 225 230 235 240  
 Gln Ile Tyr Ser Asp Gly Pro Gly Glu Ala Leu Arg Ala Met Lys Glu

245										250					255				
Asn	Gly	Arg	Tyr	Gly	Arg	Arg	Lys	Gln	Tyr	Pro	Ile	Ser	Leu	Val	Leu				
			260					265					270						
Ala	Pro	Thr	Arg	Glu	Leu	Ala	Val	Gln	Ile	Tyr	Glu	Glu	Ala	Arg	Lys				
		275					280					285							
Phe	Ser	Tyr	Arg	Ser	Arg	Val	Arg	Pro	Cys	Val	Val	Tyr	Gly	Gly	Ala				
	290					295					300								
Asp	Ile	Gly	Gln	Gln	Ile	Arg	Asp	Leu	Glu	Arg	Gly	Cys	His	Leu	Leu				
305					310					315					320				
Val	Ala	Thr	Pro	Gly	Arg	Leu	Val	Asp	Met	Met	Glu	Arg	Gly	Lys	Ile				
				325					330					335					
Gly	Leu	Asp	Phe	Cys	Lys	Tyr	Leu	Val	Leu	Asp	Glu	Ala	Asp	Arg	Met				
			340					345					350						
Leu	Asp	Met	Gly	Phe	Glu	Pro	Gln	Ile	Arg	Arg	Ile	Val	Glu	Gln	Asp				
		355					360					365							
Thr	Met	Pro	Pro	Lys	Gly	Val	Arg	His	Thr	Met	Met	Phe	Ser	Ala	Thr				
	370					375					380								
Phe	Pro	Lys	Glu	Ile	Gln	Met	Leu	Ala	Arg	Asp	Phe	Leu	Asp	Glu	Tyr				
385					390					395					400				
Ile	Phe	Leu	Ala	Val	Gly	Arg	Val	Gly	Ser	Thr	Ser	Glu	Asn	Ile	Thr				
				405					410					415					
Gln	Lys	Val	Val	Trp	Val	Glu	Glu	Ser	Asp	Lys	Arg	Ser	Phe	Leu	Leu				
			420					425					430						
Asp	Leu	Leu	Asn	Ala	Thr	Gly	Lys	Asp	Ser	Leu	Thr	Leu	Val	Phe	Val				
		435					440					445							
Glu	Thr	Lys	Lys	Gly	Ala	Asp	Ser	Leu	Glu	Asp	Phe	Leu	Tyr	His	Glu				
	450					455					460								
Gly	Tyr	Ala	Cys	Thr	Ser	Ile	His	Gly	Asp	Arg	Ser	Gln	Arg	Asp	Arg				
465					470				475						480				
Glu	Glu	Ala	Leu	His	Gln	Phe	Arg	Ser	Gly	Lys	Ser	Pro	Ile	Leu	Val				
				485					490					495					



Ala Thr Ala Val Ala Ala Arg Gly Leu Asp Ile Ser Asn Val Lys His  
500 505 510

Val Ile Asn Phe Asp Leu Pro Ser Asp Ile Glu Glu Tyr Val His Arg  
515 520 525

Ile Gly Arg Thr Gly Arg Val Gly Asn Leu Gly Leu Ala Thr Ser Phe  
530 535 540

Phe Asn Glu Arg Asn Ile Asn Ile Thr Lys Asp Leu Leu Asp Leu Leu  
545 550 555 560

Val Glu Ala Lys Gln Glu Val Pro Ser Trp Leu Glu Asn Met Ala Tyr  
565 570 575

Glu His His Tyr Lys Gly Ser Ser Arg Gly Arg Ser Lys Ser Ser Arg  
580 585 590

Phe Ser Gly Gly Phe Gly Ala Arg Asp Tyr Arg Gln Ser Ser Gly Ala  
595 600 605

Ser Ser Ser Ser Phe Ser Ser Ser Arg Ala Ser Ser Ser Arg Ser Gly  
610 615 620

Gly Gly Gly His Gly Ser Ser Arg Gly Phe Gly Gly Gly Tyr Gly  
625 630 635 640

Gly Phe Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Asn Ser Gln Gly  
645 650 655

Val Asp Trp Trp Gly Asn  
660

<210> 28  
<211> 697  
<212> PRT  
<213> Xenopus laevis

<400> 28

Met Ser His Val Ala Val Glu Asn Val Leu Asn Leu Asp Gln Gln Phe  
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Ala Gly Leu Asp Leu Asn Ser Ala Asp Ala Glu Ser Gly Val Ala Gly  
20 25 30

Thr Lys Gly Arg Tyr Ile Pro Pro His Leu Arg Asn Lys Glu Ala Ser  
 35 40 45

Arg Asn Asp Ser Asn Trp Asp Ser Gly Arg Gly Gly Asn Gly Tyr Ile  
 50 55 60

Asn Gly Met Gln Asp Asp Arg Asp Gly Arg Met Asn Gly Tyr Asp Arg  
 65 70 75 80

Gly Gly Tyr Gly Ser Arg Gly Thr Gly Arg Ser Asp Arg Gly Phe Tyr  
 85 90 95

Asp Arg Glu Asn Ser Gly Trp Asn Ser Gly Arg Asp Lys Asp Ala Tyr  
 100 105 110

Ser Ser Phe Gly Ser Arg Gly Asp Arg Gly Lys Gly Ser Leu Phe Asn  
 115 120 125

Glu Arg Gly Ser Gly Ser Arg Arg Thr Asp Asp Arg Arg Gln Asp Gly  
 130 135 140

Phe Asp Gly Met Gly Asn Arg Ser Asp Lys Ser Gly Phe Gly Arg Phe  
 145 150 155 160

Asp Arg Gly Asn Ser Arg Trp Ser Asp Asp Arg Asn Asp Glu Asp Asp  
 165 170 175

Trp Ser Lys Pro Leu Ala Pro Asn Asp Arg Val Glu Gln Glu Leu Phe  
 180 185 190

Ser Gly Ser Asn Thr Gly Ile Asn Phe Glu Lys Tyr Asp Asp Ile Pro  
 195 200 205

Val Glu Ala Thr Gly Ser Asn Cys Pro Pro His Ile Glu Ser Phe His  
 210 215 220

Asp Val Thr Met Gly Glu Ile Ile Met Gly Asn Ile Gln Leu Thr Arg  
 225 230 235 240

Tyr Thr Arg Pro Thr Pro Val Gln Lys His Ala Ile Pro Ile Ile Ile  
 245 250 255

Glu Lys Arg Asp Leu Met Ala Cys Ala Gln Thr Gly Ser Gly Lys Thr  
 260 265 270

Ala Ala Phe Leu Leu Pro Ile Leu Ser Gln Ile Tyr Ala Asp Gly Pro

275					280					285					
Gly	Asp	Ala	Met	Lys	His	Leu	Gln	Glu	Asn	Gly	Arg	Tyr	Gly	Arg	Arg
290						295					300				
Lys	Gln	Phe	Pro	Leu	Ser	Leu	Val	Leu	Ala	Pro	Thr	Arg	Glu	Leu	Ala
305					310					315					320
Val	Gln	Ile	Tyr	Glu	Glu	Ala	Arg	Lys	Phe	Ala	Tyr	Arg	Ser	Arg	Val
				325					330					335	
Arg	Pro	Cys	Val	Val	Tyr	Gly	Gly	Ala	Asp	Ile	Gly	Gln	Gln	Ile	Arg
			340					345					350		
Asp	Leu	Glu	Arg	Gly	Cys	His	Leu	Leu	Val	Ala	Thr	Pro	Gly	Arg	Leu
		355					360					365			
Val	Asp	Met	Met	Glu	Arg	Gly	Lys	Ile	Gly	Leu	Asp	Phe	Cys	Lys	Tyr
	370					375					380				
Leu	Val	Leu	Asp	Glu	Ala	Asp	Arg	Met	Leu	Asp	Met	Gly	Phe	Glu	Pro
385					390					395					400
Gln	Ile	Arg	Arg	Ile	Val	Glu	Gln	Asp	Thr	Met	Pro	Pro	Lys	Gly	Val
				405					410					415	
Arg	Gln	Thr	Met	Met	Phe	Ser	Ala	Thr	Phe	Pro	Lys	Glu	Ile	Gln	Ile
			420					425					430		
Leu	Ala	Arg	Asp	Phe	Leu	Asp	Glu	Tyr	Ile	Phe	Leu	Ala	Val	Gly	Arg
		435					440					445			
Val	Gly	Ser	Thr	Ser	Glu	Asn	Ile	Thr	Gln	Lys	Val	Val	Trp	Val	Glu
	450					455					460				
Glu	Met	Asp	Lys	Arg	Ser	Phe	Leu	Leu	Asp	Leu	Leu	Asn	Ala	Thr	Gly
465					470					475					480
Lys	Asp	Ser	Leu	Thr	Leu	Val	Phe	Val	Glu	Thr	Lys	Lys	Gly	Ala	Asp
				485					490					495	
Ala	Leu	Glu	Asp	Phe	Leu	Tyr	His	Glu	Gly	Tyr	Ala	Cys	Thr	Ser	Ile
			500					505					510		
His	Gly	Asp	Arg	Ser	Gln	Arg	Asp	Arg	Glu	Glu	Ala	Leu	His	Gln	Phe
		515					520					525			

Arg Ser Gly Lys Ser Pro Ile Leu Val Ala Thr Ala Val Ala Ala Arg  
530 535 540

Gly Leu Asp Ile Ser Asn Val Lys His Val Ile Asn Phe Asp Leu Pro  
545 550 555 560

Ser Asp Ile Glu Glu Tyr Val His Arg Ile Gly Arg Thr Gly Arg Val  
565 570 575

Gly Asn Leu Gly Leu Ala Thr Ser Phe Phe Asn Glu Lys Asn Ile Asn  
580 585 590

Ile Thr Lys Asp Leu Leu Asp Leu Leu Val Glu Ala Lys Gln Glu Val  
595 600 605

Pro Ser Trp Leu Glu Asn Met Ala Tyr Glu Gln His His Lys Ser Ser  
610 615 620

Ser Arg Gly Arg Ser Lys Ser Arg Phe Ser Gly Gly Phe Gly Ala Lys  
625 630 635 640

Asp Tyr Arg Gln Ser Ser Gly Ala Gly Ser Ser Phe Gly Ser Ser Arg  
645 650 655

Gly Gly Arg Ser Ser Gly His Gly Gly Ser Arg Gly Phe Gly Gly Gly  
660 665 670

Tyr Gly Gly Phe Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Gly Gly  
675 680 685

Ser Ser Gln Val Asp Trp Trp Gly Asn  
690 695

<210> 29

<211> 660

<212> PRT

<213> Mus musculus

<400> 29

Met Ser His Val Ala Glu Glu Asp Glu Leu Gly Leu Asp Gln Gln Leu  
1 5 10 15

Ala Gly Leu Asp Leu Thr Ser Arg Asp Ser Gln Ser Gly Gly Ser Thr  
20 25 30

Ala	Ser	Lys	Gly	Arg	Tyr	Ile	Pro	Pro	His	Leu	Arg	Asn	Arg	Glu	Ala	35	40	45
Ala	Lys	Ala	Phe	Tyr	Asp	Lys	Asp	Gly	Ser	Arg	Trp	Ser	Lys	Asp	Lys	50	55	60
Asp	Ala	Tyr	Ser	Ser	Phe	Gly	Ser	Arg	Ser	Asp	Thr	Arg	Ala	Lys	Ser	65	70	75
Ser	Phe	Phe	Ser	Asp	Arg	Gly	Gly	Ser	Gly	Ser	Arg	Gly	Arg	Phe	Asp	85	90	95
Glu	Arg	Gly	Arg	Ser	Asp	Tyr	Glu	Ser	Val	Gly	Ser	Arg	Gly	Gly	Arg	100	105	110
Ser	Gly	Phe	Gly	Lys	Phe	Glu	Arg	Gly	Gly	Asn	Ser	Arg	Trp	Cys	Asp	115	120	125
Lys	Ala	Asp	Glu	Asp	Asp	Trp	Ser	Lys	Pro	Leu	Pro	Pro	Ser	Glu	Arg	130	135	140
Leu	Glu	Gln	Glu	Leu	Phe	Ser	Gly	Gly	Asn	Thr	Gly	Ile	Asn	Phe	Glu	145	150	155
Lys	Tyr	Asp	Asp	Ile	Pro	Val	Glu	Ala	Thr	Gly	Asn	Asn	Cys	Pro	Pro	165	170	175
His	Ile	Glu	Ser	Phe	Ser	Asp	Val	Glu	Met	Gly	Glu	Ile	Ile	Met	Gly	180	185	190
Asn	Ile	Glu	Leu	Thr	Arg	Tyr	Thr	Arg	Pro	Thr	Pro	Val	Gln	Lys	His	195	200	205
Ala	Ile	Pro	Ile	Ile	Lys	Glu	Lys	Arg	Asp	Leu	Met	Ala	Cys	Ala	Gln	210	215	220
Thr	Gly	Ser	Gly	Lys	Thr	Ala	Ala	Phe	Leu	Leu	Pro	Ile	Leu	Ser	Gln	225	230	235
Ile	Tyr	Thr	Asp	Gly	Pro	Gly	Glu	Ala	Leu	Arg	Ala	Met	Lys	Glu	Asn	245	250	255
Gly	Lys	Tyr	Gly	Arg	Arg	Lys	Gln	Tyr	Pro	Ile	Ser	Leu	Val	Leu	Ala	260	265	270
Pro	Thr	Arg	Glu	Leu	Ala	Val	Gln	Ile	Tyr	Glu	Glu	Ala	Arg	Lys	Phe			

275					280					285					
Ser	Tyr	Arg	Ser	Arg	Val	Arg	Pro	Cys	Val	Val	Tyr	Gly	Gly	Ala	Asp
	290					295					300				
Ile	Gly	Gln	Gln	Ile	Arg	Asp	Leu	Glu	Arg	Gly	Cys	His	Leu	Leu	Val
305					310					315					320
Ala	Thr	Pro	Gly	Arg	Leu	Val	Asp	Met	Met	Glu	Arg	Gly	Lys	Ile	Gly
				325					330					335	
Leu	Asp	Phe	Cys	Lys	Tyr	Leu	Val	Leu	Asp	Glu	Ala	Asp	Arg	Met	Leu
			340					345					350		
Asp	Met	Gly	Phe	Glu	Pro	Gln	Ile	Arg	Arg	Ile	Val	Glu	Gln	Asp	Thr
		355					360					365			
Met	Pro	Pro	Lys	Gly	Val	Arg	His	Thr	Met	Met	Phe	Ser	Ala	Thr	Phe
						375					380				
Pro	Lys	Glu	Ile	Gln	Met	Leu	Ala	Arg	Asp	Phe	Leu	Asp	Glu	Tyr	Ile
385					390					395					400
Phe	Leu	Ala	Val	Gly	Arg	Val	Gly	Ser	Thr	Ser	Glu	Asn	Ile	Thr	Gln
				405					410					415	
Lys	Val	Val	Trp	Val	Glu	Glu	Ala	Asp	Lys	Arg	Ser	Phe	Leu	Leu	Asp
			420					425					430		
Leu	Leu	Asn	Ala	Thr	Gly	Lys	Asp	Ser	Leu	Ile	Leu	Val	Phe	Val	Glu
		435					440					445			
Thr	Lys	Lys	Gly	Ala	Asp	Ser	Leu	Glu	Asp	Phe	Leu	Tyr	His	Glu	Gly
	450					455					460				
Tyr	Ala	Cys	Thr	Ser	Ile	His	Gly	Asp	Arg	Ser	Gln	Arg	Asp	Arg	Glu
465					470					475					480
Glu	Ala	Leu	His	Gln	Phe	Arg	Ser	Gly	Lys	Ser	Pro	Ile	Leu	Val	Ala
				485					490					495	
Thr	Ala	Val	Ala	Ala	Arg	Gly	Leu	Asp	Ile	Ser	Asn	Val	Lys	His	Val
			500					505					510		
Ile	Asn	Phe	Asp	Leu	Pro	Ser	Asp	Ile	Glu	Glu	Tyr	Val	His	Arg	Ile
		515					520					525			

Gly Arg Thr Gly Arg Val Gly Asn Leu Gly Leu Ala Thr Ser Phe Phe  
530 535 540

Asn Glu Arg Asn Ile Asn Ile Thr Lys Asp Leu Leu Asp Leu Leu Val  
545 550 555 560

Glu Ala Lys Gln Glu Val Pro Ser Trp Leu Glu Asn Met Ala Phe Glu  
565 570 575

His His Tyr Lys Gly Gly Ser Arg Gly Arg Ser Lys Ser Arg Phe Ser  
580 585 590

Gly Gly Phe Gly Ala Arg Asp Tyr Arg Gln Ser Ser Gly Ala Ser Ser  
595 600 605

Ser Ser Phe Ser Ser Gly Arg Ala Ser Asn Ser Arg Ser Gly Gly Gly  
610 615 620

Ser His Gly Ser Ser Arg Gly Phe Gly Gly Gly Ser Tyr Gly Gly Phe  
625 630 635 640

Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Ser Ser Gln Gly Val Asp  
645 650 655

Trp Trp Gly Asn  
660

<210> 30  
<211> 660  
<212> PRT  
<213> Homo sapiens

<400> 30

Met Ser His Val Val Val Lys Asn Asp Pro Glu Leu Asp Gln Gln Leu  
1 5 10 15

Ala Asn Leu Asp Leu Asn Ser Glu Lys Gln Ser Gly Gly Ala Ser Thr  
20 25 30

Ala Ser Lys Gly Arg Tyr Ile Pro Pro His Leu Arg Asn Lys Glu Ala  
35 40 45

Ser Lys Gly Phe His Asp Lys Asp Ser Ser Gly Trp Ser Cys Ser Lys  
50 55 60

Asp Lys Asp Ala Tyr Ser Ser Phe Gly Ser Arg Asp Ser Arg Gly Lys  
 65 70 75 80

Pro Gly Tyr Phe Ser Glu Arg Gly Ser Gly Ser Arg Gly Arg Phe Asp  
 85 90 95

Asp Arg Gly Arg Ser Asp Tyr Asp Gly Ile Gly Asn Arg Glu Arg Pro  
 100 105 110

Gly Phe Gly Arg Phe Glu Arg Ser Gly His Ser Arg Trp Cys Asp Lys  
 115 120 125

Ser Val Glu Asp Asp Trp Ser Lys Pro Leu Pro Pro Ser Glu Arg Leu  
 130 135 140

Glu Gln Glu Leu Phe Ser Gly Gly Asn Thr Gly Ile Asn Phe Glu Lys  
 145 150 155 160

Tyr Asp Asp Ile Pro Val Glu Ala Thr Gly Ser Asn Cys Pro Pro His  
 165 170 175

Ile Glu Asn Phe Ser Asp Ile Asp Met Gly Glu Ile Ile Met Gly Asn  
 180 185 190

Ile Glu Leu Thr Arg Tyr Thr Arg Pro Thr Pro Val Gln Lys His Ala  
 195 200 205

Ile Pro Ile Ile Lys Gly Lys Arg Asp Leu Val Ala Cys Ala Gln Thr  
 210 215 220

Gly Ser Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Ser Gln Ile  
 225 230 235 240

Tyr Thr Asp Gly Pro Gly Glu Ala Leu Lys Ala Val Lys Glu Asn Gly  
 245 250 255

Arg Tyr Gly Arg Arg Lys Gln Tyr Pro Ile Ser Leu Val Leu Ala Pro  
 260 265 270

Thr Arg Glu Leu Ala Val Gln Ile Tyr Glu Glu Ala Arg Lys Phe Ser  
 275 280 285

Tyr Arg Ser Arg Val Arg Pro Cys Val Val Tyr Gly Gly Ala Asp Ile  
 290 295 300

Gly Gln Gln Ile Arg Asp Leu Glu Arg Gly Cys His Leu Leu Val Ala



305		310		315		320									
Thr	Pro	Gly	Arg	Leu	Val	Asp	Met	Met	Glu	Arg	Gly	Lys	Ile	Gly	Leu
				325					330					335	
Asp	Phe	Cys	Lys	Tyr	Leu	Val	Leu	Asp	Glu	Ala	Asp	Arg	Met	Leu	Asp
			340					345					350		
Met	Gly	Phe	Glu	Pro	Gln	Ile	Arg	Arg	Ile	Val	Glu	Gln	Asp	Thr	Met
		355					360					365			
Pro	Pro	Lys	Gly	Val	Arg	His	Thr	Met	Met	Phe	Ser	Ala	Thr	Phe	Pro
	370					375					380				
Lys	Glu	Ile	Gln	Met	Leu	Ala	Arg	Asp	Phe	Leu	Asp	Glu	Tyr	Ile	Phe
385					390					395					400
Leu	Ala	Val	Gly	Arg	Val	Gly	Ser	Thr	Ser	Glu	Asn	Ile	Thr	Gln	Lys
				405					410					415	
Val	Val	Trp	Val	Glu	Asp	Leu	Asp	Lys	Arg	Ser	Phe	Leu	Leu	Asp	Ile
			420					425					430		
Leu	Gly	Ala	Thr	Gly	Ser	Asp	Ser	Leu	Thr	Leu	Val	Phe	Val	Glu	Thr
		435					440					445			
Lys	Lys	Gly	Ala	Asp	Ser	Leu	Glu	Asp	Phe	Leu	Tyr	His	Glu	Gly	Tyr
	450					455					460				
Ala	Cys	Thr	Ser	Ile	His	Gly	Asp	Arg	Ser	Gln	Arg	Asp	Arg	Glu	Glu
465					470					475					480
Ala	Leu	His	Gln	Phe	Arg	Ser	Gly	Lys	Ser	Pro	Ile	Leu	Val	Ala	Thr
				485					490					495	
Ala	Val	Ala	Ala	Arg	Gly	Leu	Asp	Ile	Ser	Asn	Val	Arg	His	Val	Ile
			500					505					510		
Asn	Phe	Asp	Leu	Pro	Ser	Asp	Ile	Glu	Glu	Tyr	Val	His	Arg	Ile	Gly
		515					520					525			
Arg	Thr	Gly	Arg	Val	Gly	Asn	Leu	Gly	Leu	Ala	Thr	Ser	Phe	Phe	Asn
	530					535					540				
Glu	Lys	Asn	Met	Asn	Ile	Thr	Lys	Asp	Leu	Leu	Asp	Leu	Leu	Val	Glu
545					550					555					560

Ala Lys Gln Glu Val Pro Ser Trp Leu Glu Asn Met Ala Tyr Glu His  
565 570 575

His Tyr Lys Gly Gly Ser Arg Gly Arg Ser Lys Ser Asn Arg Phe Ser  
580 585 590

Gly Gly Phe Gly Ala Arg Asp Tyr Arg Gln Ser Ser Gly Ser Ser Ser  
595 600 605

Ser Gly Phe Gly Ala Ser Arg Gly Ser Ser Ser Arg Ser Gly Gly Gly  
610 615 620

Gly Tyr Gly Asp Ser Arg Gly Phe Gly Gly Gly Tyr Gly Gly Phe  
625 630 635 640

Tyr Asn Ser Asp Gly Tyr Gly Gly Asn Tyr Asn Ser Gln Gly Val Asp  
645 650 655

Trp Trp Gly Asn  
660

<210> 31  
<211> 482  
<212> DNA  
<213> Homo sapiens

<400> 31  
gagaacttga agccaccatg ggagatgaag attggaagc agaaatcaac cctcatatgt 60  
cttcctatgt tcccatatgt gagaaggata ggtattcttg agaaatgga gacaatttta 120  
acaggactcc agcttcatca tcagaaatgg atgatggacc ttctcgaaga gatcatttca 180  
tgaaaagtgg atttgcctct gggcggaatt ttggaaacag agatgctggt gagtgtaata 240  
agcgagataa tacatccaca atgggtggtt ttggagttgg aaagagtttt ggaaacagag 300  
gtttttcaaa cagcagggtt gaagatggtg atagctcttg tttctggaga gagtctagta 360  
atgactgcga agataatcca acacggaaca gaggggtttt caagaaaggc ggctatcgag 420  
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tg 482

<210> 32  
<211> 555  
<212> DNA  
<213> Homo sapiens

<400> 32

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gtgagaatac aaggacagga gctatgagaa tgttaagttt tatacttctg ttaaaaactc	180
aaaaatcaaa actattttct tctctgcac aaaaccacag acttgaagga tgttttggt	240
ttaatcccat gactcatcat ctactggatt gggagcttgt gaagaagaaa acccagctgt	300
gttcaaagtg ctcttgccct ttctggtatc aactgatgca aacacgtttc ctcttgact	360
accactgaag ccaggaatgt atgtactaaa ggcaatttct tccaaccatg caggaacatc	420
ctgttgagca tctgtcaata cttttactag aggctgtgct aaatggttat ccgattcaag	480
atcaaaaaag gaaattgctc tgccagtatt ccacaaacga ccagtacgcc caattcgatg	540
aacatattca tcaat	555

<210> 33  
 <211> 491  
 <212> DNA  
 <213> Homo sapiens

<400> 33	
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cagatgctca acaggatggt cctgcatggt tggaagaaat tgcctttagt acatacatc	180
ctggcttcag tggtagtaca agaggaaacg tgtttgcac agttgatacc agaaagggca	240
agagcacttt gaacacagct gggttttctt cttcacaagc tcccaatcca gtagatgatg	300
agtcattggga ttaaagccaa aacatccttc aagtctgtgg ttttgatgca gagaagaaaa	360
tagttttgat ttttgagttt ttaacagaag tataaaactt aacattctca tagctcctgt	420
ccttgatttc tactcctac acttaaaaaa aaaatcctta ctgactagtt atgtgagatg	480
ctaaaactta c	491

<210> 34  
 <211> 335  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (201)..(202)  
 <223> n is a, c, g, or t

<400> 34	
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tattatgtgc tactcctgga agactgatgg atatcatagg caaagaaaag attgggtctca	120

aacagatcaa atacttagtt ttggatgaag ctgatcgcat gttggatatg ggtttttggtc	180
cagaaatgaa gaagttaatt nnttgcccag gaatgccatc aaaggaacag cgccaaaccc	240
ttatgttcag tgcaactttt ccagaggaaa ttcaaagggt ggctgcagag tttttaagt	300
caaattatct gtttgttgct gttggacaag tgggt	335

<210> 35  
 <211> 555  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (546)..(546)  
 <223> n is a, c, g, or t

<400> 35	
tttttttttt tttttttttt ttttgacatt taaaatgctt taatattccc agttaacacc	60
at ttgtatca gtaactgcaa tg ttgtaagt tttagcatct cacataacta gtcagtaagg	120
at tttttttt taagtgtagg agtgagaata caaggacagg agctatgaga atgttaagtt	180
ttatacttct gttaaaaact caaaaatcaa aactattttc ttctctgcat caaaaccaca	240
gacttgaagg atgttttggc tttaatccca tgactcatca tctactggat tgggagcttg	300
tgaagaagaa aaccagctg tg ttcaaagt gctcttgccc tttctggtat caactgatgc	360
aaacacgttt cctcttgtag taccactgaa gccaggaatg tatgtactaa aggcaatttc	420
ttccaaccat gcaggaacat cctgttgagc atctgtcaat acttttacta gaggctgtgc	480
taaatggtta tccgattcaa gatcaaaaaa ggaaattgct ctgccagtat tcccacaacg	540
accagnacgc ccaat	555

<210> 36  
 <211> 347  
 <212> DNA  
 <213> Homo sapiens

<400> 36	
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at ttttcttct ctgcatcaaa accacagact tgaaggatgt tttggcttta atcccatgac	120
tc atcatcta ctggattggg agcttgtaga gaagaaaacc cagctgtgtt caaagtgtc	180
ttgccctttc tgggtatcaac tgatgcaaac acgtttcctc ttgtactacc actgaagcca	240
ggaatgtatg tactaaaggc aatttcttcc aaccatgcag gaacatcctg ttgagcatct	300
gtcaatactt ttactagagg ctgtgctaaa tggttatccg attcaag	347

<210> 37  
<211> 469  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (341)..(341)  
<223> n is a, c, g, or t

<400> 37  
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tggttgtaagt ttttagcatct cacataacta gtcagtaagg attttttttt taagtgtagg 120  
agtgagaata caaggacagg agctatgaga atgttaagtt ttatacttct gttaaaaact 180  
caaaaatcaa aactattttc ttctctgcat caaaaccaca gacttgaagg atgttttggc 240  
tttaatccca tgactcatca tctactggat tgggagcttg tgaagaagaa aaccagctg 300  
tgttcaaagt gctcttgccc tttctggatc aactgatgca naaccgtttc ctcttgact 360  
accactgaag ccaggaatgt tgtactaaag gcaatttctt ccaaccatgc aggaacatcc 420  
tggtgagcat ctgtcaatac ttactagaa gctgtgctaa atggttatc 469

<210> 38  
<211> 300  
<212> DNA  
<213> Homo sapiens

<400> 38  
aagtgtagggt ttgagaatac aaggacagga gctatgagaa tgttaagttt tatacttctg 60  
ttaaaaactc aaaaatcaaa actattttct tctctgcatc aaaaccacag acttgaagga 120  
tgttttggct ttaatcccat gactcatcat ctactggatt gggagcttgt gaagaagaaa 180  
accagctgtg gttcaaagtg ctcttgccct ttctggatc aactgatgca aacacgtttc 240  
ctcttgact accactgaag ccaggaatgt atgtactaaa ggcaatttct tccaaccatg 300

<210> 39  
<211> 300  
<212> DNA  
<213> Homo sapiens

<400> 39  
aagtgtagga gtgagaatac aaggacagga gctatgagaa tgttaagttt tatacttctg 60  
ttaaaaactc aaaaatcaaa actattttct tctctgcatc aaaaccacag acttgaagga 120  
tgttttggct ttaatcccat gactcatcat ctactggatt gggagcttgt gaagaagaaa 180  
accagctgtg gttcaaagtg ctcttgccct ttctggatc aactgatgca aacacgtttc 240

ctcttgtact accactgaag ccaggaatgt atgtactaaa ggcaatttct tccaaccatg 300

<210> 40  
<211> 371  
<212> DNA  
<213> Homo sapiens

<400> 40  
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ttaacaccat ttgtatcagt aactgcaatg ttgtaagttt tagcatctca cataactagt 120  
cagtaaggat ttttttttta agtgtaggag tgagaatata aggacaggag ctatgagaat 180  
gttaagtttt atacttctgt taaaaactca aaaatcaaaa ctattttctt ctctgcatca 240  
aaaccacaga cttgaaggat gttttggctt taatcccatg actcatcatc tactggattg 300  
ggagcttgtg aagaagaaaa ccagctgtg ttcaaagtgc tcttgccctt tctggatatca 360  
actgatgcaa a 371

<210> 41  
<211> 108  
<212> DNA  
<213> Homo sapiens

<400> 41  
gaatgtatgt actaaaggca atttcttcca accatgcagg aacatcctgt tgagcatctg 60  
tcaatacttt tactagaggc tgtgctaaat ggttatccga ttcaagat 108

<210> 42  
<211> 103  
<212> DNA  
<213> Homo sapiens

<400> 42  
gaatgtatgt actataggca atttcttcca tccatgtcgg aacatcctgt tgagcatctg 60  
tcaatacttt tactagaggc tgtgctacat ggctaaccga atc 103

<210> 43  
<211> 100  
<212> DNA  
<213> Homo sapiens

<400> 43  
gaatgtatgt actaaaggca atttcttcca accatgcagt gacatcatgt tgagcatctg 60  
tcaatacttt tactagatgc tgtctataat aggtatcgga 100

<210> 44  
<211> 79  
<212> DNA  
<213> Homo sapiens

<400> 44  
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 cagagcaagt ttcctttttt 79

<210> 45  
 <211> 471  
 <212> DNA  
 <213> Homo sapiens

<400> 45  
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 atatgggggtt tgagcctcag attcgtagaa tagtcgaaca agatactatg cctccaaagg 120  
 gtgtccgcca cactatgatg tttagtgtta cttttcctaa ggaaatacag atgctggctc 180  
 gtgattttctt agatgaatat atcttcttgg ctgttaggaag agttggctct acctctgaaa 240  
 acatcacaca gaaagtagtt tgggtggaag aatcagacaa acggtcattt ctgcttgacc 300  
 tcctaaatgc aacaggcaag gattcactga ccttagtggt tgtggagacc aaaaaggggtg 360  
 cagattctct ggaggatttc ttataccatg aaggatacgc atgtaccagc atccatggag 420  
 accgttctca gagggataga gaagaggccc ttcaacagtt ccgctcaggg a 471

<210> 46  
 <211> 381  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (264)..(264)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (336)..(336)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (378)..(378)  
 <223> n is a, c, g, or t

<400> 46  
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 cagattcgta gaatagtcga acaagatact atgcctccaa aggggtgtccg ccacactatg 120  
 atgttttagtg ctacttttcc taaggaaata cagatgctgg ctctgtgattt cttaggatga 180  
 atatattctt ttgggctgta gggaaggagt tgggctctac ctctggaaaa catcacacag 240  
 gaaagtagtt ggggtgggaa ggantcagga caaacgggtc atttctggct tgaccctccc 300

taaatggcaa caggggcaag ggatttcact tgacnnttag gtgttttggt ggggagaccc 360  
caaaaggggg tgccaggntt c 381

<210> 47  
<211> 361  
<212> DNA  
<213> Homo sapiens

<400> 47  
ttttgcaaact acttggtggt agatgaagct gatcggtatgt tggatatggg gtttgagcct 60  
cagattcgta gaatagtcga acaagatact atgcctccaa aggggtgtccg ccacactatg 120  
atgttttagtg ctacttttcc taaggaaata cagatgctgg ctctgtgattt cttagatgaa 180  
tatatcttct tgggctgtag ggaagagttg gctctacctc tgaaaacatc acacagaaag 240  
tagttgggggt gggaaggaat cagacaaacg gtcatttctg gcttggacct cctaaatggc 300  
aacagggcaa gggttcactt gaccttagtg ttttgttggg agacccaaaa aggggtgcca 360  
g 361